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AMENDED CLAIMS

29-09-1998

1. A high-voltage rotating electric machine, comprising a magnetic core built by laminated steel and a winding placed in slots in the core of laminated steel, characterized in that the winding comprises an insulation system including at least two semiconducting layers, each layer constituting essentially an equipotential surface and also including solid isolation disposed therebetween and that a clamping device is extending axially from the laminated steel and arranged for holding a packet of sheets together and whereby at least one end of the core of the laminated steel is connected to at least one clamping device for axially pressing a packet of sheets together at a predetermined amount of tension.

2. A machine as claimed in claim 1, characterized in that the clamping device is extending axially through the magnetic core.

3. A machine as claimed in any of claim 1-2, characterized in that the axially extending clamping device is arranged with an inner space for circulating coolant.

4. A rotating electric machine, comprising a stator (1) wound with high-voltage cable and provided with stator teeth (4) extending radially inwards from an outer yoke portion (23), characterized in that at least one stator tooth (4) in a tooth sector (18) is provided with at least one axially-running cooling duct (24) connected to a cooling circuit (25) in which coolant is arranged to circulate and in that the axially-running cooling tube (24) is connected at least at one end of the stator (1) to a clamping means (27, 28) for axial compression of the stator (1).

5. A machine as claimed in claim 4, characterized in that the clamping means (27, 28) comprises at least one screw joint arranged, with the cooling tube (24), to axially clamp the laminations together.

6. A machine as claimed in either of claims 4 or 5, characterized in that at one side of the stator (1) the cooling tube (24) is provided with a firmly secured shoulder (32) and at the other side of the stator it is provided with a clamping means (27, 28) to axially clamp the stator laminations together.

7. A machine as claimed in claim 6, characterized in that the clamping means (27, 28) also acts against a pressure finger (19) for axial clamping of the stator laminations.

8. A machine as claimed in claim 7, characterized in that the clamping means (27, 28) is electrically insulated from the stator core (3).

9. A machine as claimed in claim 8, characterized in that the cooling tubes (24) are glued to the stator core (3).

10. A rotating electric machine comprising a wound stator (1) consisting of stator laminations and provided with stator teeth (104) extending radially inwards from an outer yoke portion (123), characterized in that the windings comprise a first semiconducting layer (13) around which layer an insulating layer (14) is arranged and a second semiconducting layer (15) arranged around the insulating layer (14), and that an axially running clamping device electrically insulated from the stator laminations is connected at least at one end of the stator (1) to at least one clamping device (126) for axial compression to predetermined pre-stressing of the stator (1).

11. A machine as claimed in claim 10, characterized in that the stator winding consists of high-voltage cable (11).

12. A machine as claimed in either of claims 10 or 11, characterized in that the clamping device (126) runs axially through the magnetic material of the stator (1).

13. A machine as claimed in either of claims 10 or 11, characterized in that the clamping device (126) runs between the high-voltage cables (11) in the space (107) formed between two adjacent stator teeth (104).

14. A machine as claimed in any of claims 10-13, characterized in that the entire clamping device (126) is made of an insulating material, preferably glass fibre.

15. A machine as claimed in any of claims 10-13, characterized in that the clamping device (126) is arranged as a metallic pipe electrically insulated from the laminations of the stator (1).

16. A machine as claimed in either of claims 14 or 15, characterized in that the clamping device (126) is arranged to pre-stress the stator (1) with at least one spring device (129).

17. A machine as claimed in either of claims 14 or 15, characterized in that the clamping device (126) is arranged to pre-stress the laminated stack against the action of a rubber spring.

18. A machine as claimed in any of claims 10-17, characterized in that several clamping devices (126) are arranged in at least one stator tooth (104) so that each cooling tube (124) is flanked by an axially extending clamping device (126).

19. A machine as claimed in any of claims 10-18, characterized in that an additional clamping device (126) also runs through the yoke portion (123).

20. A machine as claimed in any of claims 10-19, characterized in that clamping devices (126) and cooling tubes (124) are arranged radially aligned.

21. A machine as claimed in any of claims 1-3, characterized in that at least one of the layers has substantially the same coefficient of thermal expansion as the solid insulation.

22. A machine as claimed in any of the preceding claims, characterized in that said winding is formed of a cable comprising one or more current-carrying conductors, each conductor having a number of strands, an inner semiconducting layer provided around each conductor, an insulating layer of solid insulating material provided around said inner semiconducting layer, ~~and an outer semiconducting layer provided around said insulating layer.~~

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